Microtextured regions (MTRs) have played a key role in turbine engine component cold dwell fatigue (CDF) failures in Ti-6242 and Ti-64 alloys over the past 40 years, but no practical method is currently available to reliably detect MTRs in Ti alloy billet, forgings and parts. Since the first identification, visualization and quantification of MTRs in the mid-90’s via automated electron backscatter diffraction (EBSD) methods, the speed of EBSD data collection has increased by more than 2 orders of magnitude, but EBSD remains a destructive method and can evaluate only small areas of material. Other methods to evaluate MTRs more rapidly have been attempted, such as spatially resolved acoustic spectroscopy (SRAS), polarized light microscopy, eddy current, heat tinting, etc., but none of these methods have been implemented into production material assessments. This paper presents a summary of work at GE Aerospace that used surface wave ultrasonic testing (SWUT) to characterize MTRs in on-wing components, and subsequently forgings with a wide range of forging conditions and billets representing a range of conversion practices. For the on-wing part MTR assessment, no surface treatment was used, i.e., the inspection was performed on machined, peened and engine-run hardware.